

a mixture of cement composition foam forming and foam stabilizing surfactants present in an amount sufficient to facilitate the formation of and stabilize said foam.

36. (Amended) A foamed cement composition having a set pumping time and a quick set at temperatures as low as about 32°F comprising:

a ~~calcium aluminate~~ cement comprised substantially of calcium aluminate having an alumina content of about 80% by weight of said cement;

a set accelerating additive selected from the group consisting of lithium chloride, lithium carbonate, lithium sulfate and lithium hydroxide present in said composition in an amount in the range of from about 0.2% to about 0.5% by weight of cement therein;

a retarder selected from the group consisting of citric acid, gluconic acid and tartaric acid present in said composition in an amount in the range of from about 0.5% to about 1.5% by weight of cement therein;

water selected from the group consisting of fresh water and salt water present in said composition in an amount in the range of from about 40% to about 50% by weight of cement therein;

nitrogen gas present in said composition in an amount sufficient to foam said cement composition to a density in the range of from about 10 to about 12 pounds per gallon; and

a mixture of foam forming and foam stabilizing surfactants comprised of an alcohol ether sulfate ethoxylated with from about 3 to about 10 moles of ethylene oxide, an alkyl or alkene amidopropylbetaine and an alkyl or alkene amidopropyl dimethylamine oxide, said mixture being present in said composition in an amount in the range of from about 2% to about 3% by weight of water in said composition.

Remarks

Claims 21-40 stand rejected under 35 USC § 103(a) as obvious over Reddy '191 alone or in view of Cowan '991 or Gilbert '866. As suggested by the Examiner, Applicants have amended independent claims 21 and 36 to recite that the cement is "comprised substantially of calcium aluminate." In contrast, Reddy discloses at col. 9, lines 57-59, that: